

IT IS CLAIMED:

5        1. An isolated nucleic acid sequence comprising a melon fruit-associated promoter selected from the group consisting of a cmACO1, cmACO1/TE4, MEL7, MEL2, 6E, and 2F promoter, characterized by the ability to promote fruit-associated expression of a transgene to which said melon fruit-associated promoter sequence is operably linked.

10        2. The melon fruit-associated promoter of claim 1 wherein the fruit-associated expression is ethylene regulated.

15        3. The melon fruit-associated promoter of claim 1 wherein expression is induced by changes in ethylene concentration in the plant and said melon fruit-associated promoter is activated, or primarily activated, during later stages of fruit development and/or early stages of fruit ripening.

20        4. The melon fruit-associated promoter of claim 1, wherein the melon fruit-associated promoter is a cmACO1/TE4 promoter having the nucleotide sequence presented as SEQ ID NO:41.

25        5. The melon fruit-associated promoter of claim 1, wherein the melon fruit-associated promoter is a MEL7 promoter having the nucleotide sequence presented as SEQ ID NO:42.

30        6. The melon fruit-associated promoter of claim 1, wherein the melon fruit-associated promoter is a MEL2 promoter having the nucleotide sequence presented as SEQ ID NO:43.

35        7. A plant expression vector comprising the promoter of any one of claims 4 to 6.

40        8. The plant expression vector of claim 7, operably linked to a heterologous nucleic acid coding sequence.

45        9. The plant expression vector of claim 8, operably linked to control sequences recognized by a host cell transformed with the vector.

50        10. The plant expression vector of claim 9, wherein said heterologous nucleic acid coding sequence encodes S-adenosylmethionine hydrolase (SAMase).

55        11. A plant cell comprising the plant expression vector of claim 9 or 10.

60        12. A mature plant comprising the plant cell of claim 11.

65        13. A plant cell comprising a melon fruit-associated promoter according to claim 1.

70        14. A mature plant comprising the plant cell of claim 13.

15. A method of expressing a heterologous nucleic acid sequence in a plant cell,  
comprising:

(a) transforming a plant cell with a nucleic acid construct comprising a melon promoter  
according to claim 1, operably linked to a heterologous nucleic acid coding sequence;

5 (b) culturing said plant cells in a culturing medium containing a selection agent to select  
for transformed plant cells.

10 16. The method according to claim 15, further comprising growing said transformed  
plant cells to produce a transgenic fruit-bearing plant.

15 17. The method according to claim 16, wherein said heterologous nucleic acid coding  
sequence is preferentially expressed in the fruit of said transgenic fruit-bearing plant.

18. The method according to claim 16, wherein the expression of said heterologous  
nucleic acid coding sequence is one or more of (a) ethylene regulated, (b) induced by changes in  
ethylene concentration in the plant, and (c) activated, or primarily activated, during later stages of  
fruit development and/or early stages of fruit ripening.

20 19. The method according to claim 18, wherein said heterologous nucleic acid coding  
sequence is *sam-k* and the mature fruit of said transgenic fruit-bearing plant exhibits a decrease in  
ethylene production relative to a non-transgenic plant.

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